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File: JPAB

Aug 6, 1999

PUB-NO: JP411213434A

DOCUMENT-IDENTIFIER: JP 11213434 A

TITLE: NEAR-FIELD LIGHT HEAD, AND OPTICAL RECORDING AND REPRODUCING DEVICE USING SUCH HEAD

PUBN-DATE: August 6, 1999

INVENTOR-INFORMATION:

NAME

COUNTRY

ITOU, AKITOMO

HOSAKA, SUMIO

KIKUKAWA, ATSUSHI

KOYANAGI, HAJIME

ASSIGNEE-INFORMATION:

NAME

COUNTRY

HITACHI LTD

APPL-NO: JP10018546

APPL-DATE: January 30, 1998

INT-CL (IPC): G11 B 7/135

ABSTRACT:

PROBLEM TO BE SOLVED: To miniaturize the device and to reduce crosstalk by making wavelength different between irradiation light for a near-field light generating probe and a cantilever displacement detecting light and thereby allowing common use between the irradiation optical system and the cantilever displacement optical system.

SOLUTION: Long wavelength light 30 and short wavelength light 29 are generated each by a separate semiconductor laser, and converged with a common objective lens 27. The long wavelength laser beam 30 is converged on a micro-opening 17 formed at the tip end of a cantilever 15, with a part of the beam turning to near-field light 18 from the micro-opening 17, and is used for recording and reproduction of signals for a medium. The short wavelength laser beam 29, having a different wavelength, is converged on the rear side face of the cantilever 15, with the converging position separated from that of the laser beam 30. In this case, a pyramid projection formed at the tip end of the cantilever 15 is set at a proper height in accordance with the wavelength of the laser beams 30, 29. Consequently, crosstalk of both laser beams is suppressed, improving the ratio of the signal of the light 18 to a noise, and enhancing the detection accuracy of the cantilever displacement of the short wavelength laser beam.

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